Patent claims

1. A protective layer for protecting a component against corrosion and oxidation at high temperatures,
which is composed of the following elements (details in percent by weight):
0.5 to 2% rhenium,
15 to 21% chromium,
24 to 26% cobalt,
9 to 11.5% aluminum,
0.05 to 0.7% yttrium and/or at least one equivalent metal selected from the group consisting of scandium and the rare earth elements,
0.0 to 1% ruthenium,
remainder nickel and manufacturing-related impurities.

2. The protective layer as claimed in claim 1,
containing
1 to 1.8% rhenium,
16 to 18% chromium,
9.5 to 11% aluminum,
0.3 to 0.5% yttrium and/or an equivalent metal selected from the group consisting of scandium and the rare earth elements.

3. The protective layer as claimed in claim 1 or 2,
containing
1.5% rhenium,
17% chromium,
25% cobalt,
10% aluminum,
0.4% yttrium and/or an equivalent metal selected from the group consisting of scandium and the rare earth elements.

4. The protective layer as claimed in claim 1, 2 or 3, which contains at most 6% by volume of chromium-rhenium precipitates.

5. The protective layer as claimed in claim 1, 2, 3 or 4, to which a thermal barrier coating has been applied.

6. A component, in particular a component of a gas turbine, which has a protective layer as claimed in one or more of claims 1 to 4 for protection against corrosion and oxidation at high temperatures.

7. A process for producing the protective layer as claimed in claim 1 by using powder,
characterized in that
the powder which is used has a trace element content of < 0.5%.

8. The process as claimed in claim 7,
characterized in that
the carbon content of the powder is < 250 ppm.

9. The process as claimed in claim 7 or 8,
characterized in that
the oxygen content of the powder is < 400 ppm.

10. The process as claimed in claim 7, 8 or 9,
characterized in that
the nitrogen content of the powder is < 100 ppm.

11. The process as claimed in claim 7, 8, 9 or 10, characterized in that the hydrogen content of the powder is < 50 ppm.

12. The process as claimed in claim 7, characterized in that the powder is sprayed.

13. The process as claimed in claim 7, characterized in that the powder is vaporized.